



UNITED STATES PATENT AND TRADEMARK OFFICE

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PAPER NUMBER

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ELECTRONIC

**Office Action Summary**

Application No.

10/822,704

Applicant(s)

LUNTS ET AL.

Examiner

Irene Marx.

Art Unit

1651

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 June 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 5-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date, \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

The amendment filed 6/18/07 is acknowledged. Claims 5-12 are being considered on the merits.

Claims 5-12 are being examined on the merits to the extent that they pertain to the production of L-glutamic acid ONLY.

Claims 5-12 are withdrawn from consideration as they pertain to the production of L-arginine or L-proline.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 5-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Phillips *et al.* (J. of Bacteriology, Feb. 1972, vol. 109, pages 714-719) in light of Integrated Enzyme Database (IntEnz; <http://www.ebi.ac.uk/intenz/query?cmd=SearchEC&ec=4.3.1.19>)

The claims are directed to the production of glutamic acid with an *Escherichia* strain that is auxotrophic for isoleucine, and/or deficient in any of L-isoleucine biosynthetic enzyme activities, and specifically in threonine deaminase activity.

Phillips *et al.* disclose the production of glutamic acid with *Escherichia coli* LA-9 that is auxotrophic for isoleucine, and deficient specifically in threonine deaminase activity. See, e.g., Phillips *et al.*, page 715, paragraph 2; page 716, col. 2. IntEnz adequately demonstrates that threonine deaminase and threonine dehydratase are the same enzyme.

The strain *Escherichia coli* LA-9 clearly produces L-glutamic acid which is collected from the culture.

### Response to Arguments

Applicant's arguments have been fully considered but they are not deemed to be persuasive.

Regarding the teaching of the production of glutamate, applicant is directed to page 716, lines 2-7. The author correctly concludes that glutamate must be produced and accumulated by

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the cells, since the cells grow as long as that isoleucine is provided. Regarding the collecting step, in order to present the graphs in figure 1, clearly the glutamate is collected from the culture together with the cells to construct the growth curves, i.e., Curve 1, 2, 4, and 7.

Therefore, these arguments fail to persuade and the rejection is maintained.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Phillips *et al.* (J. of Bacteriology, Feb. 1972, vol. 109, pages 714-719) taken with Integrated Enzyme Database (IntEnz; <http://www.ebi.ac.uk/intenz/query?cmd=SearchEC&ec=4.3.1.19>) and further taken with Kinoshita *et al.* (U.S. Patent No. 3,003,925) and Kinoshita *et al.* (U.S. Patent No. 3,220,929)

The references are discussed supra.

Phillips *et al.* differ from the claimed invention in that glutamate is not recovered by ion exchange or precipitation. However, each of the Kinoshita references adequately demonstrates that the recovery of glutamic acid by ion exchange or precipitation is old and well known in the art. See, e.g., '925, Example 15 and '929, Col. 14.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the process of producing glutamic acid in *E. coli* by collecting the accumulated product by using the conventional techniques of ion exchange and precipitation as taught by the Kinoshita *et al.* references for the expected benefit of obtaining the important amino acid glutamic acid useful in pharmaceutical and nutritional formulations.

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Thus, the claimed invention as a whole was clearly *prima facie* obvious, especially in the absence of evidence to the contrary.

No claim is allowed.

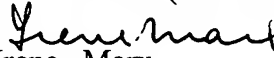
Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irene Marx whose telephone number is (571) 272-0919. The examiner can normally be reached on M-F (6:30-3:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Irene Marx  
Primary Examiner  
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